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Widening Participation at the University of Edinburgh: contextual admissions, retention, and degree outcomes

Abstract

In Scotland, as in the rest of the UK, there is growing recognition that prior qualifications may not provide an adequate indication of the 'potential' of applicants from educationally-disadvantaged backgrounds to succeed at university. Universities are being encouraged to use contextual data on neighbourhood characteristics and school performance to identify disadvantaged applicants in the admissions process. Contextualised admissions have been pioneered at the University of Edinburgh since 2004, and this article reports findings on the prior qualifications, retention and degree outcomes of a sample of students who entered the University in 2004-2006. The article describes the distribution of contextual data and discusses the limitations of indicators based on geographical area and school characteristics. Differences in average prior qualifications, retention and degree outcomes associated with indicators of widening participation are small. Statistical models suggest that after taking account of prior qualifications WP-indicated students were as likely to complete an HE qualification and achieve an Honours degree as non-WP students, but they had a lower probability of achieving a higher classification of degree. The findings raise questions for the University about possible causes for lower achievement by disadvantaged students.

Key words

Higher Education; Widening Access; Deprivation; Contextual data; Outcomes; Independent schools

Widening Participation at the University of Edinburgh: contextual admissions, retention, and degree outcomes

In Scotland, as elsewhere in the UK, reducing social inequalities in access to Higher Education (HE) is an important focus of policy: increasing HE participation by students from a wider range of social, economic and educational backgrounds is expected to contribute to greater social justice and social mobility, as well as increasing the talent pool of graduates. The main policy levers used by government to achieve wider access are the range of financial incentives (and penalties) offered to universities. Most recently, in Scotland the Post-16 Education Bill (passed in 2013) places considerable emphasis on widening access and reinforces the duty on universities to recruit and retain more students from disadvantaged backgrounds by including clearly defined targets in the outcome agreements set between the Scottish Funding Council (SFC) and each individual university (Scottish Parliament, 2013; Universities Scotland, 2012).

However, widening participation has proved difficult to achieve, and the social class composition of HE applicants and entrants has changed little since the 1990s (Croxford and Raffe, forthcoming 2014). The Scottish Funding Council (SFC) reported that only 10% of students attending university in 2004/5 came from the 20% most deprived areas, and this increased to just 11% by 2010/11 (SFC, 2007; 2013).

The problem is not just with widening access to HE in general, but also with widening access to the most selective institutions. SFC data show that students from the lowest quintile of deprivation are far more likely to enter HE in a college than a university (SFC, 2013: figure 10). Other research shows that students from higher social-class backgrounds and

independent schools tend to be concentrated in higher status institutions such as the four Ancient Scottish universities (Raffe and Croxford, 2013).

The universities face the challenge of how to widen participation in line with policy priorities while maintaining their high selection criteria for admission and reputation for excellence. Competition for entry to the Ancient universities is very intense. Despite their high entry requirements, over-subscribed courses have a large and growing pool of highly qualified applicants from which to select. Consequently, because applicants from lower socio-economic backgrounds tend to have lower school qualifications few would be successful in gaining places in the absence of widening access strategies. Furthermore, it is argued that prior qualifications may not wholly capture the "potential" of students to benefit from studying at university (Admissions to Higher Education Review, 2004), and therefore universities are being encouraged to use contextual data on socio-economic circumstances when selecting students for admission. The new Outcome Agreements between the SFC and universities include a commitment to implement or expand the use of contextual admissions to give greater recognition to a candidate's circumstances as part of a broader goal to widen access (Universities Scotland, 2012).

This article outlines the development of policies on contextualized admissions, and the types of contextual indicators that are used. It focuses on the University of Edinburgh which has pioneered the use of contextual data to identify disadvantaged students during the admissions process since 2004, and provides an update to a previous article in Scottish Affairs (Cree et al, 2006) which described the rationale for development of a contextualised admissions policy. A recent study has taken the question of widening access beyond the issues of student recruitment and selection, to consider further issues of student retention,

progression and achievement. The main question addressed by this study is whether students gaining entry on the basis of such contextual data had greater potential to succeed at university and achieve good degree outcomes than their grades alone might indicate. It considers the following issues:

1. What contextual data are used for admissions purposes, and how well do they identify disadvantaged students with potential?
2. In what ways do the prior qualifications of WP-indicated students differ from those of other students?
3. In what ways do the degree outcomes of WP-indicated students differ from those of other students? What issues do these results raise?

The study is based on historic data, and the admissions procedures have been further refined in subsequent years.

Contextual data used in admissions

The use of contextual data in admissions was encouraged by the Schwartz report (2004) "Fair admissions to Higher Education", which emphasized that applicants should be judged by their "potential" as well as their prior qualifications: *"Universities and colleges have a responsibility to identify the talent and the potential of applicants and to treat all applicants fairly and transparently. Institutions should also recognize that talent and potential may not be fully demonstrated by examination results. Recruiting the best possible students for their courses is a legitimate aim and, in order to achieve this aim, institutions should explicitly consider the background and context of applicants' achievements"* (Admissions to Higher Education Review, 2004: 23).

In 2009, the Milburn review of "Fair Access to the Professions" also promoted the use of contextual data for university admissions, recommending: "*Widening participation by developing university partnerships with low-attaining schools and with the professions, and supporting admissions policies that take account of the social and educational context of pupil achievement"* (Milburn, 2009: 80).

Universities can use contextual data in a number of ways: to target schools and students for aspiration raising; to inform admissions decisions; to identify students who may need additional learner support; to assess applications for scholarships and bursaries; for statistical and qualitative monitoring (Bridger et al, 2012).

A number of contextual measures can be used to put prior qualifications in the context of the circumstances in which they have been obtained – but none of these can reliably indicate disadvantage at an individual level. The few individual-level measures refer to students who are the first in their family to enter HE, or who are care leavers, and are derived from students' responses to questions on the application form of the Universities and Colleges Admissions Service (UCAS). Socio-economic status is a further UCAS measure that is used for performance indicators by the Higher Education Statistics Agency (HESA) but is not used as a contextual measure for admissions purposes. Self-reported circumstances may be unreliable and impossible to verify, and could be open to abuse if they are used for high-stakes purposes such as university admissions.

In view of the need for reliable, nationally-available and transparent measures, the most common contextual indicators are derived from area-based data linked to applicants' post-code, and school/college-performance data linked to applicants' last school or college. Following research by the "Supporting Professionalism in Admissions" (SPA) programme,

some contextual measures are being provided by UCAS from 2012 (SPA, 2012) – but these were not available to the study described here.

The contextual measure currently emphasized by the Scottish Government is based on the Scottish Index of Multiple Deprivation (SIMD). SIMD identifies those data zones in Scotland suffering from multiple deprivation, based on seven different aspects of deprivation - Employment, Income, Health, Education, Access to Services, Crime and Housing. These different 'domains' are combined to produce a single ranking of 6505 small areas in Scotland based on their overall level of deprivation (Scottish Government, 2012). These rankings are often grouped into deciles or quintiles, and HE policies typically focus on the most deprived 20% (MD20) and 40% (MD40). SIMD provides key 'measures of success' for the Scottish Funding Council (SFC)'s policy on widening participation - 'Learning for All' (SFC, 2011). In Wales there is a similar focus on students from areas of multiple deprivation defined by the "Communities First" initiative (Taylor et al, 2013).

The advantages of using measures based on indices of multiple deprivation such as SIMD are transparency and that they are based on national data sources and linked to post-code of home address. However, in common with other measures based on geographical areas, SIMD cannot accurately distinguish disadvantaged individuals – some students living in areas classified as deprived by SIMD may themselves be relatively advantaged, while many disadvantaged students live in areas that are not classified as deprived.

Area-based contextual measures for students domiciled in the rest of the United Kingdom (RUK) are derived from the POLAR2 (Participation of Local Areas) classification of small areas across the UK provided by the Higher Education Funding Council for England (HEFCE). The Young Participation Rate (YPR), published in 2007, measured the HE participation rates of

people who were aged 18 between 2000 and 2004 and entered an HE course in a UK higher education institution or further education college, aged 18 or 19, between academic years 2000-01 and 2005-06 (HEFCE, 2007). HESA does not consider YPR to be relevant for Scottish-domiciled students because levels of HE participation are higher in Scotland (HESA, 2012). For one university in Wales, Taylor et al (2013) used student records to analyse the characteristics, progression and outcomes of undergraduates from low participation neighbourhoods which were identified by YPR and indices of multiple deprivation. They found that students from low participation neighbourhoods were not necessarily from socio-economically disadvantaged households or first-generation entrants to HE, and there was little differences in their progression and outcomes, all other things being equal. The researchers suggest that *"an area-based approach may not be entirely appropriate to achieve the underpinning aims of a widening participation strategy*" (Taylor et al, 2013).

Alternative contextual indicators are based on classifications of the performance of schools previously attended, such as the average percentage of the school cohort achieving qualifications and/or participating in higher education. The rationale for using measures of school context derives from research findings that students from low-performing schools may have greater potential to benefit from university and achieve good degree outcomes than would be expected from their prior qualifications. For example, students from independent schools have very high average qualifications and very high entry rates to the most prestigious universities, but a number of studies found that students who enter university from independent schools are likely to achieve less well than would be predicted by their prior qualifications (Naylor and Smith, 2002; HEFCE, 2003; 2005; Ogg et al, 2009; Hoare and Johnston, 2010; Taylor et al, 2013). Two HEFCE studies conclude that students from independent schools appear to do consistently less well than students from other

schools and colleges, when compared on a like for like basis - but that the effect of school performance on HE performance is inconsistent (HEFCE, 2005:2).

A study of widening participation at the University of Bristol noted that the University had been criticized in some quarters for favouring state-school applicants over those from independent schools, but *"those state school pupils admitted have not only realized their potential in performing as well as independent school students with similar A-level grades, they have on average outperformed them"* (Hoare and Johnston, 2010: 18). The Bristol study further concluded that students from schools which had low-average performance at A-level, and from neighbourhoods with little or no tradition of entering HE, performed neither better nor worse than those from high performing schools and neighbourhoods which send many teenagers to university. However, not all the findings were positive: non-white students and those from blue-collar households performed below the Bristol average (Hoare and Johnston, 2010: 19).

A recent study at the University of St Andrews explored differences in predicted degree performance between students from low-performing secondary schools and those from schools performing at or above the Scottish average; they found that students with three A-grades from a below average school perform equally well as those with four A-grades from an above average school, and concluded that *"if school context is ignored, raw school grades alone may be an incomplete measure of academic ability and the probability of success at university"* (Lasselle et al, forthcoming).

Widening Participation at the University of Edinburgh

The University of Edinburgh adopted its widening participation strategy in June 2002, with the aim of widening the social-class base of the student intake and increasing participation

by students from state schools. In their 2006 article for Scottish Affairs, Cree and colleagues described how they researched and developed a new system of admissions within the College of Humanities and Social Science (HSS) that was a trail-blazing policy, unique in Scotland at that time. Initially, a major obstacle was the low level of applications from prospective students in the less advantaged groups, which in turn was linked to their relatively low prior qualifications (Cree et al, 2006). In order to attract applications from a wider socio-economic base the College set lower minimum entry requirements for all applicants than in previous years (Cree et al, 2006). Selection procedures were modified to take account of contextual data when considering applications, and to aid this process a statistical tool was created to categorise schools in terms of their performance. Selection processes gave extra credit to WP applicants: applicants from Scottish schools with little or no tradition of progression to higher education, or RUK schools with low performance at A-level; those who were first in the family to attend HE; those who had experienced serious disruptions to their formal education. (Note that SIMD was not used for admissions purposes at that time).

Although the disproportionately low numbers of students entering the University from state schools was a cause for concern, it was considered invidious to discriminate between applicants on the basis of school type. By taking contextual factors into account the College hoped to make a more accurate assessment of each applicant's potential (Cree et al, 2006). Nevertheless, the decision to reduce admissions requirements for all applicants – in order to attract a wider pool of applicants - was a brave one.

The University's Widening Participation team further developed a range of initiatives to encourage more prospective students from under-represented groups, especially outreach

work with local schools under the pre-existing Lothians Equal Access Programme (LEAPS). A major focus was to raise awareness and increase participation in courses leading to the professions under the Pathways to the Professions programme (Hood, 2010).

The contextualised admissions process was introduced for students entering the University in autumn 2004, and rolled out to other colleges. Now that sufficient time has elapsed for the first cohorts of students admitted under contextualized admissions policies to complete their degrees, it is possible to analyse the achievements of students with WP indicators compared to other students.

Characteristics of the sample

The current study was commissioned by the Student Recruitment and Admissions service of the University, and linked to the REACH programme, funded by the SFC (University of Edinburgh, 2013). It is based on student records for three cohorts of UK-domiciled young students who started their degree courses at the University of Edinburgh in selected subjects between 2004 – 2006, and had either withdrawn or graduated by the end of 2011. (Data for three cohorts were combined to maximize the sample size). The subjects included in the sample were:

- Humanities & Social Science (HSS): Architecture; Business Studies; Divinity; English Literature; History; Law; Psychology; Sociology.
- Science & Engineering (SE): Biology; Chemistry; Mathematics; Physics.
- Medicine & Veterinary Medicine (MVM): Medicine; Veterinary Medicine.

Just over half (55%) of students in the sample had prior qualifications from the Scottish Qualifications Authority (SQA), and the main qualifications of other students were A-levels of the General Certificate of Education (GCE). Although type of qualification did not entirely

coincide with country of domicile – 98% of Scottish domiciled students were SQA qualified – it is a key factor in the analyses that follow in order to ensure that analyses are based on comparable levels of prior qualifications.

Student records do not include indicators as to whether the student was offered a place under criteria for widening access. (The omission of a WP 'label' may reduce the stigma of disadvantage, but also makes it more difficult to track their progress). For this analysis it was necessary to recreate WP-indicators based on contextual data, as summarised in Table 1.

A small proportion of SQA-qualified students (9%) were part of the LEAPS outreach programme which encourages disadvantaged youngsters living in the Lothians to aspire to university; LEAPS participants included young people who were "first in family", had disrupted school education, lived in areas of deprivation, or were from low-participation schools.

Although SIMD was not used for contextualized admissions in 2004-6, it is now an important indicator for SFC so we have included it when recreating the WP indicator. 11% of the SQA-qualified sample was from postcodes designated as areas of multiple deprivation (3% from MD20 and 8% from MD40).

School performance bands are WP indicators created by the University from publicly available data to identify low-performing schools. For each school and college in Scotland a performance score is derived from the average proportion of their students who entered HE in the most recent three years prior to the admissions process. Comparable data on HE progression are not available for RUK schools and colleges, so their performance scores are derived from average examination attainment. In each case the scores are averaged over the most recent three years (in order to mitigate fluctuations in small schools) which means

they provide a measure of the educational context of the school or college rather than a measure of the immediate peer group. Performance scores are divided into five bands, with bands D and E denoting the two lowest categories. Low performing schools were the largest source of WP students in the sample, with 25% of the SQA-qualified sample and 6% of the GCE-qualified sample coming from schools in bands D or E.

A small proportion of GCE-qualified students (3%) came from low participation neighbourhoods identified by HEFCE POLAR2 (described above). This indicator is not relevant to Scottish-domiciled students.

The WP indicators are not mutually exclusive, since they are all intended to identify social and educational disadvantage: 10% of the SQA qualified sample are identified by more than one indicator. The largest overlap is between membership of LEAPS and low-performing schools (6% of the SQA sample were in both categories).

<Table 1 about here>

Altogether, around one third of the SQA-qualified sample was WP-indicated by at least one contextual measure, but fewer of the GCE-qualified sample had WP indicators (8%). This is mainly because GCE-qualified students tended to have different demographic, social and educational characteristics to SQA-qualified students, as shown by Table 2. Almost all of the GCE-qualified sample was domiciled in RUK, whereas almost all of the SQA-qualified sample was Scotland-domiciled.

The majority of students were from relatively high social class backgrounds, and this is true of WP-indicated students (54% of whom were from professional and managerial classes) and non-WP students (68% from professional and managerial classes). Just 17% of WP-indicated students were from working-class backgrounds (the three lowest cells of the

classification) compared with 7% of non-WP students. There are problems with the measure of social class, which is derived by UCAS from information provided on the student's application form (Croxford and Raffe, 2011). Nevertheless, the apparent mis-match between WP-indicators and social class serves to emphasise that WP indicators do not provide precise identification of disadvantaged students.

Although the majority (86%) of WP-indicated students had previously attended a comprehensive school, less than half (46%) of non-WP students had done so. Surprisingly, we find that a small minority of WP-indicated students (4%) previously attended an independent school. Note also that a much higher proportion of GCE-qualified students were from independent schools compared with SQA-qualified students.

<Table 2 about here>

Table 2 also summarises differences in prior qualifications. The main differences between WP-indicated and non-WP students lie in the lower number of passes they achieved at grade A. Among SQA-qualified students, 39% of the WP-indicated achieved four or more passes at grade A, compared with 57% of non-WP students. Similarly, among GCE-qualified students, fewer of the WP-indicated students achieved three or more A-level passes at grade A than non-WP students (29% vs. 43%). Among the SQA-qualified sample, relatively few students had achieved three or more passes at Advanced Higher (just 12% of WP-indicated students and 18% of non-WP students). Study at Advanced Higher (level 7 of the Scottish Credit and Qualifications Framework (SCQF)) provides students with greater depth

of subject knowledge and experience of self-directed study in preparation for HE, but is not an essential entry requirement for most courses; this is an issue to which we will return.

It is difficult to create comparable measures of prior attainment from the SQA and GCE qualification systems since they are based on different school systems, with different educational philosophies, with the consequence that GCE-qualified students study a narrower range of subjects in greater depth than Highers-qualified students. However, for some analyses we have made use of the tariff defined by UCAS which gives approximate equivalences between different qualifications. The University does not use the UCAS tariff for admissions, but we have used detailed information on students' qualifications and grades to reproduce the UCAS scores shown in the last row of Table 2. On average, WP-indicated students with SQA qualifications achieved 17 points lower on the UCAS score than their non-WP counterparts, and this is roughly equivalent to the difference between one Higher grade pass being a B rather than an A.

Retention and degree outcomes

Overall completion and degree outcomes are summarised in Table 3, which shows that almost all WP-indicated students completed their course and the majority achieved Honours degrees or equivalent. However, WP-indicated students were less likely to achieve the top classes of degree than other students. The types of degree awarded differed between Colleges of the University, as shown by Table 3. In the sample for Medicine and Veterinary Medicine the degrees awarded to the majority of students were described simply as a pass (included as "top-2" class in our analysis), with a very small minority passing "with distinction" or "honours" (included as "top" class); fewer WP-indicated students achieved the top classes of degree in Medicine and Veterinary Medicine. In both Science and

Engineering and Humanities and Social Science degrees were differentiated into classes of Honours, and WP-indicated students were less likely than other students to achieve the higher classes of Honours. The gap in achievement of a top-2 degree (1st or 2.1) is most noticeable: 64% of WP-indicated students compared with 79% of non-WP students achieved a top-2 degree in Humanities and Social Science, and 45% versus 58% in Science and Engineering.

<Table 3 about here>

Factors influencing progression and degree outcomes

The SQA-qualified sample

Statistical models enable us to analyse the effects of WP indicators on each of the degree outcomes while controlling for all other factors, including prior qualifications. We carried out a series of binary logistic regression models focusing on each outcome in turn. Our first set of statistical models focused on the SQA-qualified sample, and considered the effect of each contextual variable separately (Table 4). A structural variable included in the models is "% achieved outcome per subject", which adjusts for differences between the subject courses in their propensity to award each outcome: for example the proportion of students achieving a top-2 degree varies from 41% in Physics to 81% in English Literature (and 94% in medicine and veterinary medicine, based on different classifications). This method of coping with subject differences in outcomes follows the approach taken by Ogg et al (2009).

The models include different measures of prior qualifications at SCQF levels 6 and 7 in order to estimate the effects of qualification level. (The SCQF scores, as specified in the notes to

Table 2, were transformed to normal scores with a mean of zero and standard deviation of one). The models confirm that prior qualifications are the main factor influencing degree outcomes, and that qualifications at SCQF 7 have an additional effect to qualifications at SCQF 6. This means that although Highers are the main entry qualification to the University, and are an important predictor of degree outcomes, those students with more Advanced Highers and/or A-levels achieve better degree outcomes on average.

The contextual measures showed different patterns of association with degree outcomes. There was no difference in the outcomes of LEAPS students compared with other students. Students from an MD40 area were less likely to achieve an Honours degree or a top-2 degree than their peers, but area deprivation made no difference to whether they gained a top class degree. Students from low participation schools were less likely to achieve a top-2 class degree than other students, but school participation made no difference to whether they gained a top class degree. On the other hand, students for whom school participation is not recorded (possibly because they did not come straight from school) were more likely to achieve a top class degree.

Students from independent schools were less likely to achieve all three outcomes than their peers from state schools.

<Table 4 about here>

A separate analysis of GCE-qualified students (reported elsewhere) found that WP-indicated students in the HSS sample were more likely to achieve a 1st class degree than would have been predicted by their prior qualifications. There were relatively few WP-indicated students with GCE qualifications, and these appear to have been less disadvantaged in their

progression and outcomes than was the case for WP-indicated students with SQA qualifications. We may speculate that differences (inadequacies?) in WP indicators may have resulted in spurious identification of WP students in the GCE-qualified sample.

Models based on the whole sample

The second set of models combined both SQA-qualified and GCE-qualified students: for these models the single combined WP indicator is used – although just 8% of the GCE sample are WP-indicated. In addition, the models included indicators of social class and independent school.

Two structural variables were included in the models: "% achieved outcome per subject", which adjusts for differences between the subject courses in their propensity to award each outcome; and an indicator of prior-qualification type, which adjusts for differences between the qualification scores and samples (this should not be mis-construed as a real comparison between the effects of SQA and GCE qualifications, or of Scottish students compared with RUK).

The results are summarized in Table 5, and as with the previous models found that the prior qualification score was the most important factor influencing outcomes. The measure of prior qualifications is the UCAS score which we have transformed to a normalised score separately for SQA and GCE qualified students; the relative odds (shown in Table 5 by Exp(B)) of achieving each outcome for a student whose prior qualification score is one standard deviation above the mean are in the region of 2:1, or twice the likelihood of a student with average qualifications achieving that outcome.

After taking account of prior qualifications, we find that WP-indicated students were less likely than non-WP students to achieve a Top-2 degree. (The models provide some evidence

that WP-indicated students were also less likely than their peers to achieve an Honours degree or a top class degree, but these results are not statistically significant at the 95% confidence level). On the other hand, social class and attendance at an Independent school made no difference to achievement of Honours or a Top-2 degree, but did influence achievement of a Top class degree. All other things being equal, students who were working class were less likely to achieve a Top class degree than their higher social class peers, but so also were those from an independent school.

The series of statistical models were replicated separately for each subject area in turn (table not shown), and found that in 10 of the 14 subjects included in the sample WP-indicated students achieved as good outcomes as their peers with the same levels of prior qualifications. In the other four subjects WP-indicated students had a lower probability of achieving one or two of the four outcomes. The reasons for these differences will be explored by a qualitative study.

<Table 5 about here>

Summary and Discussion

Let us now summarise the findings of our research questions.

What contextual data are used for admissions purposes, and how well do they identify disadvantaged students with potential?

It is extremely difficult to find reliable data to identify disadvantaged students who are likely to succeed at university. Until the development of policies to widen access, the principal criterion on which admissions decisions were based was the level of prior qualifications.

There is growing recognition that prior qualifications do not always give an adequate indication of a student's "potential", and that qualifications should be contextualized using measures of social, economic and educational disadvantage. Contextual data need to be readily available and robust since admissions policies need to be clear and consistently applied. Therefore the contextual data used by universities, including the University of Edinburgh, focus on externally-produced data classifying schools according to their performance and participation rates, and home areas according to indices of multiple deprivation.

However, measures based on schools or geographical areas may sometimes cause students to be identified and targeted who are not personally from a disadvantaged background (Taylor et al, 2013). This mis-match becomes apparent from our analysis of student records which show the high proportion of WP-indicated students who are from high social-class backgrounds. Data on social class are not always reliable, and not used for admissions purposes, but since they refer to the circumstances of individual students they provide an indication that existing contextual measures may not be as finely-tuned as might be desirable.

On the other hand, our data refer only to those students who gained entry to the University, and give no indication of the unrealized potential of disadvantaged young people in the wider community who did not enter the University. In some cases potential students may have gone to other universities or colleges, failed to achieve entry, or never applied to HE. Unfortunately we do not currently have data sources that would enable us to explore this issue.

In what ways do the prior qualifications of WP-indicated students differ from those of other students?

All students in the sample, including those who were WP-indicated, had high levels of qualifications relative to the population as a whole. The main differences between WP-indicated and non-WP students are that on average WP-indicated students had slightly fewer qualifications at grade A, and fewer qualifications at SCQF7 (Advanced Higher or A-level).

Nevertheless, while some WP-indicated students had relatively lower prior qualifications, the majority had prior qualifications at similar levels to non-WP students, and might have gained entry to the University without contextual data being used in the decision (the data do not record whether contextual data were taken into account, so we have reconstructed the WP-indicator from available data).

We should note that this study is based on historical data – students entering the University between 2004 and 2006, who had withdrawn or graduated by 2011. Prior qualifications required for entry to some subjects have been more tightly defined in the intervening period, and contextual data have been refined, so there may be less variation in the prior qualifications of more recent cohorts.

In what ways do the degree outcomes of WP-indicated students differ from those of other students? What issues do these results raise?

Although the majority of WP-indicated students achieved degree outcomes that were as good as their non-WP peers, some did not achieve as highly. We found that a smaller proportion of WP-indicated students achieved the top classes of degree than other

students: in MVM slightly fewer WP-indicated students passed "with distinction" or "honours"; while in SE and HSS WP-indicated students were less likely than other students to achieve a Top-2 degree (1st or 2.1). Results from statistical models show that WP-indicated students were less likely to achieve a Top-2 degree even after taking account of prior qualifications. Thus, the lower proportion of WP-indicated students achieving good degree outcomes is only partly explained by their prior qualifications, and there are additional disadvantages associated with WP. When the effects of each contextual measure are modelled separately we find that both SIMD 40 and school bands D and E were associated with lower achievement of a Top-2 degree.

To some extent these findings are disappointing compared with results of research elsewhere which suggested that students who enter university from low performing schools are likely to achieve more highly than would be predicted by their prior qualifications (Naylor and Smith, 2002; Ogg et al, 2009). In view of that research we might (optimistically) have hoped to find that WP-indicated students would achieve as good (or better) outcomes than their peers with the same level of prior qualifications. The fact that on some outcome measures a significant minority of WP-indicated students achieved less well may be a reflection of the fact that WP students at university suffer similar disadvantages and adverse pressures to school students from disadvantaged backgrounds – particularly with respect to cultural, social and economic capital.

We note, however, that this study confirms the findings of other research that students from independent schools did not achieve as good degree outcomes as their peers from state-funded schools.

Prior qualifications were the main factor determining degree outcomes, and students with the highest qualifications were most likely to progress and achieve good degree outcomes. Similar effects of prior qualifications are reported by a study at Bristol University (Hoare and Johnston, 2010). In addition, our analysis shows that prior qualifications at SCQF level 7 provide additional benefit in achievement of degree outcomes. This raises issues concerning the interface between prior qualifications and the standards of academic study expected of students entering the University. Most Scottish–domiciled students obtain their place at university on the basis of prior qualifications at Higher Grade (SQF level 6) and traditionally the 4-year Scottish degree has been structured on the basis of Higher-grade entry. However, the majority of students entering the University have qualifications at SCQF level 7 (Advanced Higher or A-level), as a consequence of subject-level admissions advice, as well as competition and credential inflation. We understand that Scottish schools which have fewer students progressing to HE, have difficulty in providing a range of Advanced Highers courses. Although data are not available on the provision of Advanced Highers courses for the cohorts included in this study, in 2012 the average number of subjects offered at Advanced Higher per school ranged from 15 in school band A (highest participation) to 4.5 in school band E (lowest participation) (Scottish Government, 2013).

What is the effect on the assumptions and expectations of teaching staff about the levels of students' prior knowledge and study skills? Are the minority of students who do not have SCQF level 7 qualifications disadvantaged by their lower depth of knowledge and skills? Since WP-indicated students are less likely to have SCQF level 7 qualifications than other students, the gap may be a source of continuing disadvantage.

Nevertheless, the results of this study raise questions about the assumptions underlying contextualised admissions policies - that students identified by contextual data as being from disadvantaged backgrounds have the potential to succeed at university despite lower prior qualifications. Results from this study may suggest that in some cases students identified by school performance and area deprivation did not reach their potential. We could argue that the study refers to the earliest phase of contextualised admissions policies, and that procedures have improved meantime. However, we also need to consider why some WP students did less well than other students: is it because disadvantaged individuals experience more financial or family difficulties? Are there institutional or departmental barriers?

Further research

This research has raised more questions than it has answered. Discussion of the findings within the University has focused on possible causes of lower achievement by WP-indicated students, and how these should be addressed – including whether the 1st year curriculum can be made more accessible to students who do not have SCQF level 7 qualifications. Further qualitative research will focus on the following issues: Can we identify the barriers preventing disadvantaged students achieving their potential? And how should they be addressed? Are teaching staff sufficiently aware of difficulties faced by WP-indicated students? Do WP-indicated students need more academic support during the first two years of their degree course to compensate for gaps in their prior learning? Should recruitment place greater emphasis on achievement of Advanced Highers, and if so what are the implications for wider participation?

However, there is a need for Scotland-wide research on issues relating to wider access. There is surprisingly little research of the effectiveness of different policies and practices regarding widening participation. Policy should not be based on wishful thinking, but needs a sound evidence base. In his presentation to the SFC's annual "Learning for All" conference David Raffe highlighted the lack of research to inform such an important area of policy. He suggested that the development of Outcome Agreements might provide an opportunity to develop a richer knowledge base that will support more evidence-based policy and practice, but the danger that "*we collect information for monitoring outcomes, but not the richer evidence needed to understand how to improve policy and practice. It is a big step from knowing the outcomes of an intervention towards knowing what impact it has had on those outcomes. And it is an even bigger step towards knowing why it has or hasn't had an impact, or how it could be helped to do, or whether its objectives were realistic in the first place."* (Raffe, 2013).

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Table 1. % of sample with WP-indicators, by type of prior qualifications

	% of SQA-qualified	% of GCE-qualified	% of combined sample
WP indicators (students may have more than one indicator)			
in LEAPS	9		5
SIMD 2nd most deprived	8		5
SIMD most deprived	3		2
School participation/attainment band D	22	5	14
School participation/attainment band E	3	1	2
Low participation neighbourhood (POLAR2: YPR lowest quintile)		3	1
(Students with more than one WP indicator)	(10)	(>1)	(6)
Students with at least one WP indicator	**34**	**8**	**22**
Students with no WP indicators	**66**	**92**	**78**
N (=100%)	*2472*	*2007*	*4479*

Note: Percentages do not sum to 100 because more than one indicator may apply to each student.

Table 2. Social class and previous educational sector and qualifications of WP-indicated students compared with non-WP students (%)

		WP-indicated				Not-WP		
		SQA	GCE	All		SQA	GCE	All
Domicile	Scotland	100	0	83		100	3	48
	RUK	0	100	17		0.4	97	52
Social class	Higher managerial & professional	24	22	24		38	42	40
	Lower managerial & professional	30	35	30		28	29	28
	Intermediate	13	12	13		11	8	10
	Small employers & own account workers	7	4	7		6	6	6
	Lower supervisory & technical	4	3	4		3	1	2
	Semi-routine	10	4	9		5	3	4
	Routine	3	5	4		1	1	1
	(Unclassified)	(9)	(15)	(10)		(9)	(9)	(9)
Previous education	Comprehensive	95	43	86		66	25	44
	6th form college		21	4			7	4
	Grammar school		5	1			16	8
	Independent school	3	11	4		29	48	39
	Other/not available	(2)	(21)	(6)		(4)	(5)	(5)
Prior qual-ifications (Percentages do not sum to 100 because multiple measures are applicable)	3+ Advanced Higher	12				18		
	5+ Highers at A	24				41		
	4+ Highers at A	39				57		
	4+ Highers at AB	87				93		
	3+ A-levels at A		29				43	
	3+ A-levels at AB		82				81	
	SCQF6 score: mean (sd)	13.5 (3.5)				14.5 (3.3)		
	SCQF7 score: mean (sd)	4.6 (4.9)				6.1 (5.5)		
	UCAS score: mean (sd)	445 (99)	387 (71)	435 (98)		472 (101)	401 (73)	435 (95)
	N (=100%)	*829*	169	*998*		*1643*	*1838*	*3481*

Notes.(1) SCQF6 score was calculated from Highers passes: A=3, B=2, C=1.

(2) SCQF7 score was calculated from both Advanced Highers and A-level passes: A=3, B=2, C=1.

(3) The UCAS score was calculated using the point distribution currently used by UCAS: at Higher A=80, B=65, C=50; at Advanced Higher A=130, B=110, C=90; at A-level A=120, B=100 and C=80.

Table 3. Progression and degree outcomes of WP-indicated and non-WP students by prior qualification type and college (%)

		WP indicated				Not WP		
		SQA	**GCE**	**All**		**SQA**	**GCE**	**All**
HSS	Completed an HE qualification	89	93	90		90	96	93
	Achieved an Honours degree	75	87	77		83	90	86
	Top-2 degree: 1st or 2.1 Honours	60	82	64		73	85	79
	Top degree: 1st class	11	13	11		14	26	20
	N	*436*	*92*	*528*		*814*	*804*	*1618*
SE	Completed an HE qualification	82	91	84		86	92	89
	Achieved an Honours degree	64	82	68		71	80	76
	Top-2 degree: 1st or 2.1 Honours	40	64	45		54	61	58
	Top degree: 1st class	13	21	15		17	16	17
	N	*297*	*67*	*364*		*562*	*748*	*1310*
MVM	Completed an HE qualification	97	*	97		95	98	97
	Top-2 degree: Pass	93	*	93		94	95	95
	Top degree: Distinction or Honours	10	*	12		16	22	19
	N	*94*	*10*	*104*		*264*	*285*	*549*
All	Completed an HE qualification	87	93	88		90	94	92
	Achieved an Honours degree	70	85	73		78	85	82
	Top-2 degree	57	76	60		70	77	74
	Top degree	11	17	12		15	21	19
	N	*827*	*169*	*996*		*1640*	*1837*	*3477*

Table 4. Binary logistic regression model to predict effects of WP indicators on degree outcomes (SQA-qualified students only)

Outcome	Explanatory variables	B	S.E.	Sig.	Exp(B)
Honours degree (HSS & SE only)	in LEAPS	-0.29	0.18	0.11	0.8
	SIMD: highest two quintiles	**-0.49**	**0.16**	**0.00**	**0.6**
	School participation band D or E	-0.02	0.13	0.90	1.0
	School band unknown	-0.33	0.26	0.20	0.7
	Independent school	**-0.34**	**0.16**	**0.03**	**0.7**
	SCQF 6 score in S5	**0.43**	**0.07**	**0.00**	**1.5**
	SCQF 7 score	**0.58**	**0.08**	**0.00**	**1.8**
	% achieved outcome per subject	**0.07**	**0.01**	**0.00**	**1.1**
	Reference category	1.81	0.10	0.00	6.1

Outcome	Explanatory variables	B	S.E.	Sig.	Exp(B)
Top-2 degree	in LEAPS	-0.21	0.17	0.22	0.8
	SIMD: highest two quintiles	**-0.33**	**0.15**	**0.03**	**0.7**
	School participation band D or E	**-0.25**	**0.12**	**0.04**	**0.8**
	School band unknown	-0.15	0.25	0.55	0.9
	Independent school	**-0.27**	**0.14**	**0.05**	**0.8**
	SCQF 6 score in S5	**0.57**	**0.06**	**0.00**	**1.8**
	SCQF 7 score	**0.54**	**0.07**	**0.00**	**1.7**
	% achieved outcome per subject	**0.05**	**0.00**	**0.00**	**1.1**
	Reference category	1.12	0.08	0.00	3.1

Outcome	Explanatory variables	B	S.E.	Sig.	Exp(B)
Top class degree	in LEAPS	-0.09	0.27	0.73	0.9
	SIMD: highest two quintiles	-0.11	0.22	0.6	0.9
	School participation band D or E	-0.05	0.16	0.76	1
	School band unknown	**0.79**	**0.32**	**0.01**	**2.2**
	Independent school	**-0.45**	**0.17**	**0.01**	**0.6**
	SCQF 6 score in S5	**0.59**	**0.09**	**0.00**	**1.8**
	SCQF 7 score	**0.51**	**0.08**	**0.00**	**1.7**
	% achieved outcome per subject	**0.07**	**0.01**	**0.00**	**1.1**
	Reference category	-2.08	0.1	0.00	0.1

The Reference category refers to: not in LEAPS; SIMD 3-5; school-band-A-C; Prior education not in independent school; has SCQF 6 and 7 scores at the mean level for the sample; studying a subject for which outcomes are at the mean for the sample.

Table 5. Binary logistic regression model to predict effects of WP indicators and social class on degree outcomes (Whole sample)

		B	S.E.	Sig.	Exp(B)
Honours degree (HSS & SE only)	WP-indicated	-0.19	.105	0.07	0.83
	Prior quals (normal score)	**0.67**	**.048**	**0.00**	**1.96**
	GCE-qualified	**0.61**	**.097**	**0.00**	**1.85**
	Independent school	0.04	.110	0.73	1.04
	Social class: intermediate	-0.04	.117	0.73	0.96
	Social class: Working	-0.26	.139	0.06	0.77
	Social class: unclassified	-0.22	.144	0.13	0.80
	% achieved outcome per subject	**0.06**	**.006**	**0.00**	**1.06**
	Ref. cat.	1.49	.083	0.00	4.42

		B	S.E.	Sig.	Exp(B)
Top-2 degree	WP-indicated	**-0.36**	**.093**	**0.00**	**0.70**
	Prior quals (normal score)	**0.69**	**.041**	**0.00**	**2.00**
	GCE-qualified	**0.58**	**.082**	**0.00**	**1.79**
	Independent school	0.03	.092	0.76	1.03
	Social class: intermediate	-0.02	.102	0.86	0.98
	Social class: Working	-0.08	.127	0.52	0.92
	Social class: unclassified	-0.23	.128	0.07	0.80
	% achieved outcome per subject	**0.05**	**.003**	**0.00**	**1.05**
	Ref. cat.	0.99	.071	0.00	2.68

		B	S.E.	Sig.	Exp(B)
Top degree	WP-indicated	-0.23	.119	0.05	0.79
	Prior quals (normal score)	**0.64**	**.046**	**0.00**	**1.90**
	GCE-qualified	**0.49**	**.090**	**0.00**	**1.63**
	Independent school	**-0.21**	**.097**	**0.03**	**0.81**
	Social class: intermediate	-0.19	.120	0.12	0.83
	Social class: Working	**-0.61**	**.182**	**0.00**	**0.55**
	Social class: unclassified	-0.22	.161	0.18	0.81
	% achieved outcome per subject	**0.06**	**.005**	**0.00**	**1.06**
	Ref. cat.	-1.78	.083	0.00	0.17

Reference category refers to: Non-WP; average prior qualifications; SQA-qualified; not from an independent school; managerial & professional social class, studying a subject for which outcomes are at the mean for the sample.